

### **REMARKS**

Applicant respectfully requests reconsideration of the present application.

### **CLAIMS STATUS**

Applicants have amended claims 1 and 2 without prejudice or disclaimer. Applicants reserve a right to file one or more continuation applications directed to the subject matter omitted by the present amendment. Support for the amended claims may be found throughout the specification as filed and, in particular, in paragraph [0085]. No new matter has been added.

After the amendment, pending claims include examined claims 1-5 and withdrawn claims 6-20.

### **SPECIFICATION**

The PTO objected to the abstract for not meeting the length requirement. Applicants respectfully submit 37 CFR §1.72(a) and MPEP § 606 mentioned on page 2 of the Office Action do not relate to abstracts. Applicants believe that the PTO's intention was to cite 37 CFR §1.72(b) and MPEP § 608.01(b). The only length requirement in 37 CFR §1.72(b) states that the abstract may not exceed 150 words in length. Applicants submit that the present abstract satisfies the less than 150 words requirement. Accordingly, Applicants request withdrawal of the objection.

### **CLAIMS REJECTIONS UNDER 35 U.S.C. § 102(b)**

Claims 1-5 stand rejected as anticipated by Lieber (US patent No. 5,897,945). Applicants traverse.

Applicants respectfully submit that there is at least one difference between the claimed invention and Lieber. For example, Lieber does not teach Zn doped with an element having an oxidation state higher than an oxidation state of Zn as the amended claim 1 requires. As Lieber

does not teach all the elements of the claimed invention, Applicants respectfully request withdrawal of the rejection.

Applicants further submit that Lieber does not teach a nanomaterial composition of matter having an electrical conductivity greater than 0.0001 mhos.cm as claim 1 requires. The PTO relies on inherency theory and asserts that “the prior art composition is either the same or substantially same as that claimed by Applicants, and identical compositions have identical properties”. Applicants respectfully bring the Examiner’s attention to Example 2 of US patent No. 6,344,271, which like the present application relates to nanomaterial compositions, see column 18, lines 35-55 of the ‘271 patent. In the ‘271 patent, nanopowders comprising 75% by weight indium tin oxide (ITO) (mean grain size: 12.9 nm, 60.9 m<sup>2</sup>/gm) and 25% by weight alumina (mean grain size: 4.6 nm, 56 m<sup>2</sup>/gm) were mixed and pressed into pellets. The pellet was then reduced in a mixture of 5%H-95% Ar. As a result, the initial yellow pellet became bluish green in color. The final bluish green pellet demonstrated catalytic activity, while the initial yellow pellet showed no catalytic activity. Everything else, including the composition, was the same between the bluish green pellet and the yellow pellet. In sum, the example 2 of the ‘271 patent demonstrates that two nanopowders having identical components can have very different properties.

Thus, even, if for argument’s sake, Lieber were disclosing a nanomaterial having components identical to components of the nanomaterial claimed by Applicants, Lieber’s nanomaterial would not have had necessarily the same properties as the nanomaterial claimed by applicants. In this regard, Applicants bring the PTO’s attention to *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993), which states that the “fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic.”

In sum, Applicants respectfully submit that the rejection over Lieber should be withdrawn because Lieber does not teach a nanomaterial composition having an electrical conductivity greater than 0.0001 mhos.cm.

Applicants further submit that the claimed invention is non-obvious over Lieber as Lieber does not provide any suggestion or motivation to modify his disclosure in order to arrive at the claimed invention.

Claim 1 stands rejected as anticipated by Bickmore (US patent No. 5,984,997). Applicants traverse.

Bickmore does not teach at least one element of the claimed invention. For example, Bickmore does not teach Zn doped with an element having an oxidation state that higher than an oxidation state of Zn as the amended claim 1 requires. As Bickmore does not teach all the elements of the claimed invention, Applicants respectfully request withdrawal of the rejection.

Applicants further submit that Bickmore does not teach a nanomaterial composition of matter having an electrical conductivity greater than 0.0001 mhos.cm as claim 1 requires. As Applicants explained above, the PTO cannot rely on inherency theory for showing this element of the claimed invention, because two nanomaterials having identical components can have very different properties. Thus, the rejection should be also withdrawn because Bickmore does teach electrical conductivity element of the claimed invention.

Applicants further submit that the claimed invention is non-obvious over Bickmore as Bickmore does not provide any suggestion or motivation to modify his disclosure in order to arrive at the claimed invention.

Claims 1-3 stand rejected as anticipated by Gray (US patent No. 5,985,173). Applicants traverse.

Gray does not teach at least one element of the claimed invention. For example, Gray does not teach a nanomaterial composition of matter having an electrical conductivity greater than 0.0001 mhos.cm as claim 1 requires. As Applicants explained above, the PTO cannot rely on inherency theory for showing this element of the claimed invention, because two nanomaterials having identical components can have very different properties. In sum, Applicants request withdrawal of the rejection.

Applicants further submit that the claimed invention is non-obvious over Gray as Gray does not provide any suggestion or motivation to modify his disclosure in order to arrive at the claimed invention.

#### CLAIMS REJECTION UNDER 35 U.S.C. § 102(e)

Claims 1 and 3-5 stand rejected as anticipated by El-Shall (US 2003/0145681). Applicants traverse.

El-Shall does not teach at least one element of the claimed invention. For example, El-Shall does not teach Zn doped with an element having an oxidation state that higher than an oxidation state of Zn as the amended claim 1 requires. Furthermore, El-Shall does not teach a nanomaterial composition of matter having an electrical conductivity greater than 0.0001 mhos.cm as claim 1 requires. As Applicants explained above, the PTO cannot rely on inherency theory for showing this element of the claimed invention, because two nanomaterials having identical components can have very different properties. In sum, as El-Shall does not teach all the elements of the claimed invention, Applicants request withdrawal of the rejection.

Applicants submit that the present invention is not obvious over El-Shall as El-Shall does not provide any suggestion or motivation to arrive at the claimed invention.

CONCLUSION

Applicant believes that the present application is in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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